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and each lateral pair is a single black line on each side of the caterpillar, constituting the seventh and eighth of the eight black lines above mentioned. These eight black lines are somewhat obscure upon the third and anal segments. Along the transverse central portion of each segment not intruded upon by the eight longitudinal black lines, and extending downward to the abdominal surface, are six protuberances, each bearing a many-branched spine. These spines are bright yellow in color, except the tips, which vary from light brown to deep black. Below the upper protuberance on each side of the larva are two narrow oblique black lines which if continued upward would meet at the dorsum. The lower extremities of these oblique lines inclose the base of the median protuberance of each segment.

The lower portion of the sides of the larva, and the abdominal surface except its central portion, are of a jet-black color, with two longitudinal narrow broken lines of pure white extending from the fourth to the penultimate segments. The lower of these two white lines is more indistinct than the upper.

The stigmata are of an orange color, each being encircled by a narrow black ring. The head parts and both true legs and prop-legs, together with the central portion of the abdominal surface and the posterior half of the anal segment, are of a bright reddish-brown color and have a highly polished surface.

THE PUPA.

The pupæ average 24 mm. in length by 10.5 mm. in breadth (.94 by .41 inch). They are of a dark-brown, almost black color, with surface finely shagreened and in most cases thickly sprinkled or shaded with a light brick-red "bloom."

CONTRIBUTIONS TO A KNOWLEDGE OF THE HEMIPTERA-FAUNA OF KANSAS.

BY E. A. POPENOE, OF THE STATE AGRICULTURAL COLLEGE.

The following list comprises chiefly the specimens of Hemiptera taken by the writer in the years 1883 and 1884. Substantial aid in collecting has been rendered by Mr. Warren Knaus, of Salina; and in determination of the species by Professor Philip R. Uhler, of Baltimore.

HEMIPTERA-HETEROPTERA.

Corimelaena nitiduloides, Wolff.
 cærulescens, Stal.
 pulicaria, Germar.
 cærulea, (?).
Homœmus bijugis, Uhler.
Pangæus bilineatus, Say.
Annestus pusillus, Uhl.
Stiretrus anchorago, Fab.
Perillus claudus, Say.
Podisus spinosus, Dallas.
Brochymena arborea, Say.
 annulata, Fab.
Ælia americana, Dallas.
Melanostoma sulcifrons, Stal.
Cosmopepla carnifex, Fab.
Mormidea lugens, Fab.

Æbalus pugnax, Fab.
Euschistus variolarius, P. Beauv.
 tristigmus, Say.
Hymenarcys æqualis, Say.
Trichopepla semivittata, Say.
Peribalus limbolarius, Stal.
Raphigaster pensylvanicus, DeG.
Thyanta perditor, Fab. var.
 custator, Fab. var.
Murgantia histrionica, Hahn.
Chariesterus antennator, Fab.
Anasa tristis, DeG.
Corynocoris distinctus, Dall.
Euthochtha galeator, Fab.
Metapodius femoratus, Fab.
Leptoglossus phyllopus, L.

Neides spinosus, Say.
Dasycoris humilis, Uhl.
Harmostes reflexulus, Say.
Aufeius impressicollis, Stal.
Corizus lateralis, Say.
Leptocoris trivittatus, Say.
Lygaeus turcicus, Fab.
 reclivatus, Say.
Erythriscius fasciatus, Dallas.
Melanocoryphus bicrucis, Say.
Nysius angustatus, Uhl.
 californicus, Stal.
Ischnodemus falicus, Say.
Blissus leucopterus, Say.
Geocoris bullata, Say.
 piceus, Say.
Microtoma carbonaria, Rossi.
Ligyrocorys sylvestus, Linn.
Myodocha serripes, Oliv.
Physatochila sp. indet.
Trapezonotus fallax, Say.
Lygus lineolaris, P. Beauv.
Pecilocapsus lineatus, Fab.
Calocoris rapidus, Say.
Peciloscytus pusillus, Reut.
 basalis, Reut.
Camptobrochis nebulosus, Uhl.
Agalliaestes suavis, Reut.
Eceritatarsus elegans, Uhl.
Piesma pusilla, Uhl.

Cicada septendecim, Linn.
 parvula, Say.
 four sps., indet.
Ceresa diceros, Say.
 bubalus, Fab.
Stictocephala festina, Say.
Enchenopa binotata, Say.
Campylonchia curvata, Fab.
Ophiderma mera, Say.
Heliria cristata, Fairm.
Telamona securicula, Uhl.
 unicolor, Fitch.
 jugata, Uhl.
 querci, Fitch,
 querci, Fitch, var.
 fasciata, Fitch, var.
Amphiscopa bivittata, Say.
Ormenis pruinosa, Say.
Aphrophora quadrangularis, Say.

Corythucha arcuata, Say.
Aradus rectus, Say.
 similis, Say.
Mezira lobata, Say.
Acanthia lectularia, Linn.
Nabis ferus, Linn.
Phymata erosa, Linn.
Macrocephalus prehensilis, Fab.
Sinea diadema, Fabr.
Prionotus cristatus, Linn.
Fitchia nigrovittata, Stal.
Milyas cinctus, Fabr.
Apiomerus spissipes, Say.
Melanolestus picipes, H. Schf.
Conorhinus sanguisugus, Lec.
Sericophanes ocellatus, Rent.
Salda signoretii, Guer.
 deplanata, Uhl.
Galgulus oculatus, Fab.
Naucoris poeyi, Guer.
Belostoma americanum, Leidy. (?)
Zaitha fluminea, Say.
Ranatra quadridentata, Stal.
Nepa apiculata, Harris. (?)
Notonecta undulata, Say.
 sp., indet.
Anisops platynemesis, Fieb.
Corixa alternata, Say.
 n. sp., Uhler.

HEMIPTERA-HOMOPTERA.

Nersia curviceps, Stal.
 sp., indet.
Penthimia americana, Walker.
Scolops spurcus, Uhl.
 sulcipes, Say.
 dessicatus, Uhl.
 three sps., indet.
Liburnia gothica, Uhl.
Cixius sp., indet.
Delphax tricarinatus, Say.
 consimilis, Uhl.
Proconia undata, Say.
Diedrocephala mollipes, Say.
 coccinea, Frost.
Tettigonia versabilis, Uhl.
 hieroglyphica, Say.
Cicadula exitiosa, Uhl.
 sp., indet.
Stenocladus unicolor, Fitch.

Allygus irroratus, Say.
Scaphoideus immistus, Say.
Thamnotettix aurora, Uhl.
 sp. indet.
Agallia siccifolia, Uhl.
Bythoscopus sp., indet.

Gypona octolineata, Say.
 columba, Fitch, var.
 sp., indet.
Jassus seminudus, Say.
Erythroneura, two species.
Cœlidia subbifasciata, Say.

MANHATTAN, KAS., November 21, 1884.

ON SOME SALT MARSH COLEOPTERA.

BY WARREN KNAUS, SALINA, KANSAS.

The salt marshes of Kansas are characterized by an insect fauna that is, usually, peculiarly their own. They are of especial interest to the entomologist, for here he finds forms closely allied to those taken on the ocean shore—the Atlantic, or Gulf of Mexico. The coleopterist who has made marine forms a special study, can with reasonable accuracy tell what species will be found on the saline deposits of the Mississippi valley. As an illustration of this, Mr. Henry Ulke, of Washington, D. C., writes me that he predicted to a correspondent that *Cicindela togata*, then taken on the coast near Corpus Christi, Texas, would be found on the salt flats in the vicinity of Lincoln, Neb.; a few weeks afterward his prediction was verified.

Each season for the last four years, I have collected *Cicindelidæ* on a salt marsh near Fredonia, Wilson county. In the summer of 1880 I visited this locality for the purpose of procuring specimens of the saline incrustations, to be analyzed. While walking across the bare surface of a lateral offshoot of the marsh, a tiger beetle ran from before me; a stroke of my hat disabled it and made its capture easy. This specimen, when identified, proved to be *Cicindela circumpecta* Laf., a comparatively rare species, and never before, I believe, taken so far east.

In 1881 I visited this locality the last week in June, and found the same beetle in abundance. A large number of specimens were taken, and they did not disappear until the last week in July.

The season of 1882 they were observed about the same time—*i. e.*, from the last week in June until the last week in July.

The season of 1883 was about two weeks later than the preceding season, and I took, in company with my friend Mr. S. C. Mason, sixty specimens on the afternoon of August 6th.

The present season this handsome beetle was very abundant; one hundred and thirty-five specimens being taken July 12th in two hours' work with the use of a single net. Ten days later many of them had disappeared, only one hundred specimens being taken in an afternoon's work.

Two varieties occur in almost equal abundance with the typical form—one with blue elytra, and one with bronze elytra and thorax. This beetle is found more abundant near the water's edge, where the bare saline ground is moist and warm, and in sheltered offshoots, where the sun shines the hottest.

In the same locality *Cicindela punctulata* Fabr. is also found mingled with *Cicindela circumpecta*, but their occurrence is rare in comparison with the latter species.

Cicindela cuprascens Lec., is given by Professor E. A. Popenoe in his "Preliminary List of Kansas Coleoptera," as occurring at Lawrence, Topeka, Hutchinson, and in Rooks county, on "sand bars and banks of streams." In August, 1882, Mr. S. C. Mason found this species in great abundance on a sand bar at the mouth of a small stream which emptied